

HiLIFE
HELSINKI INSTITUTE OF LIFE SCIENCE

Bistable criticality in human brain



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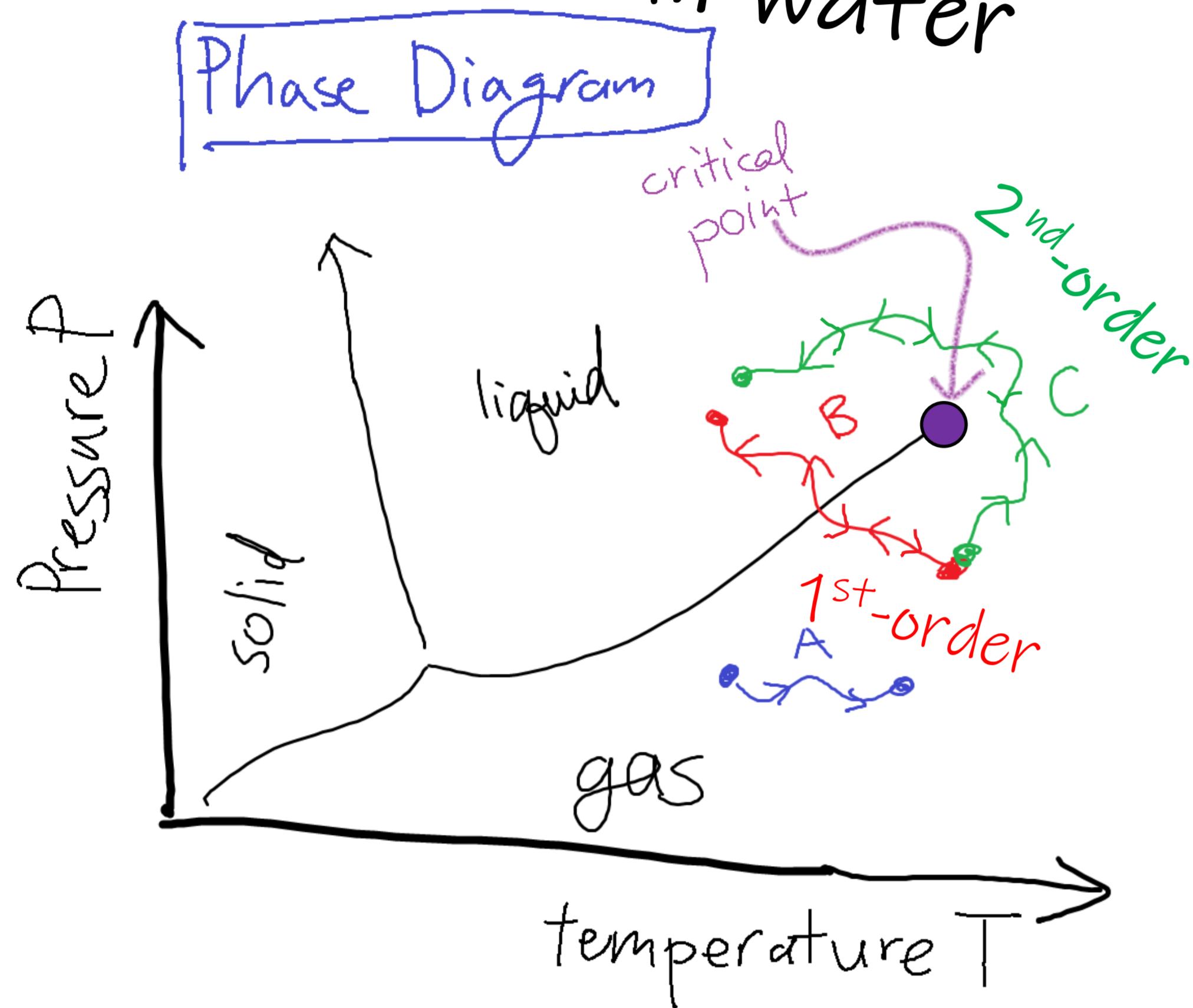


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Many thanks to friends from Italy: Drs. Gabriele Arnulfo, Benedetta Toselli, Lino Nobili et al.,

A story about catastrophic shifts

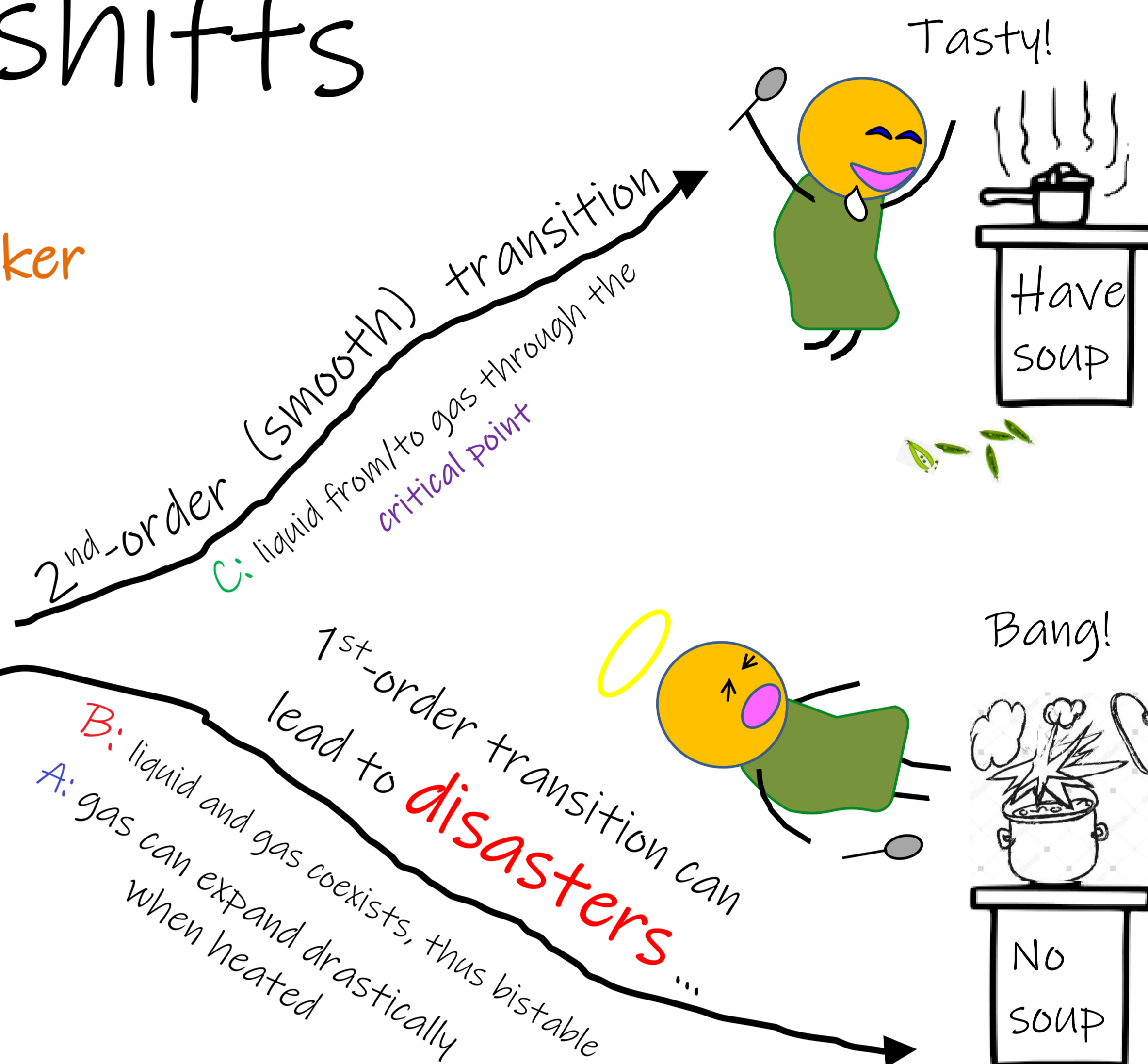
Theory: phase transitions in water



A man & a pressure cooker



In the real life ...

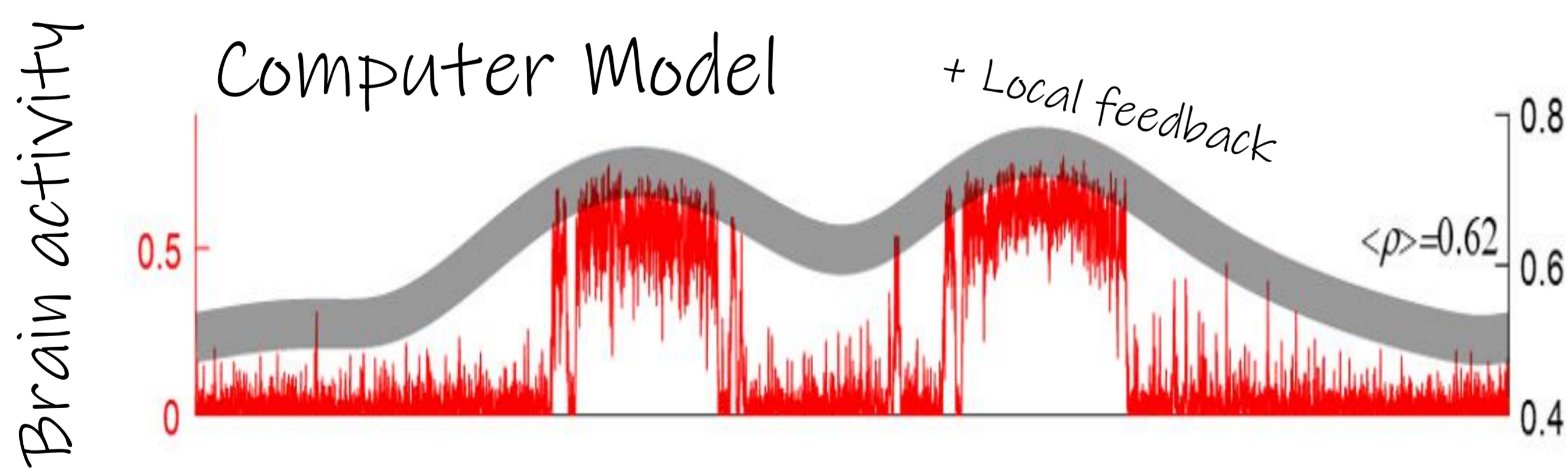


The border of two realms

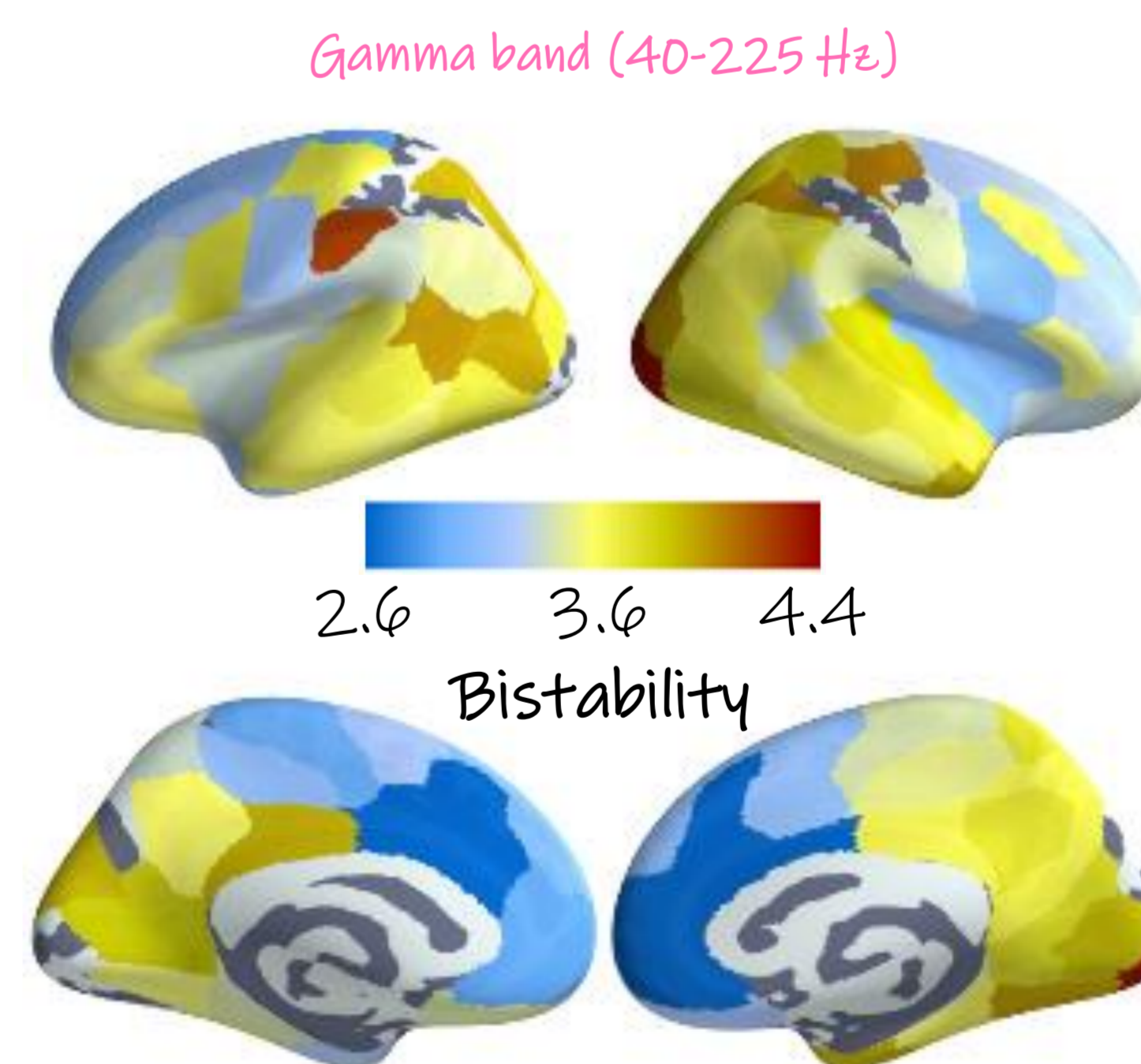
Meanwhile in the brain ...

The same principle also governs the brain, namely:
High degree of bistability predates catastrophic events such as seizures

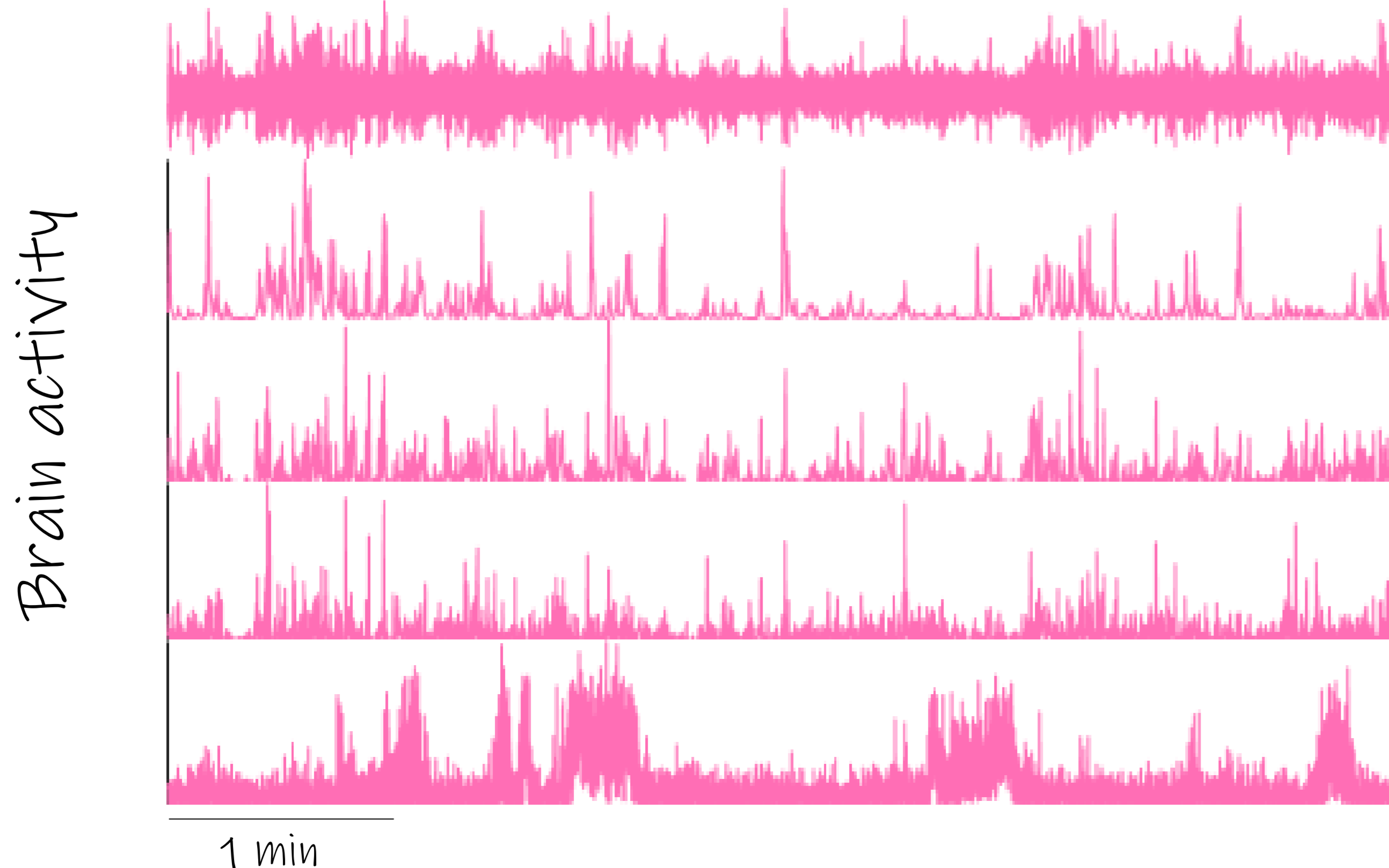
1ST-order transition is associated with bistability



Brain maps of bistability



Epileptic patients' brain (depth electrode)



High precision in detecting disease

